

Macroeconomic Data Framework & Budget Analytics

Macroeconomic management and fiscal policy plays critical role in the overall budget preparation, planning and execution processes of a state government.

Highlights

It provides **single point of access to consolidated data**

It **decreases the time for creating reports** from hours to seconds

It allows **online and real time access to financial data** through specific web based data browsing tool

It provides **user friendly way for creating reports** with drag & drop approach

It allows **flexible customization of reports** and built-in analyses

It enables **advanced and predictive analytics** to be created by power users and the used by others

It **does not require for IT staff interventions** while creating dynamic reports and designing the analysis

It is available to users on **all modern platforms and devices**, from PC's to tablets and smartphones

Introduction

Macroeconomic management and fiscal policy plays critical role in the overall budget preparation, planning and execution processes of a state government. The success of establishing a sound and sustainable fiscal budget within a medium term expenditure framework with the reasonable ceilings depends deeply on macroeconomic management that is **delivering information to government**

policy makers. In order support the government during the budget preparation, large amounts of financial and socio-economic data must be gathered, stored, processed, analysed, presented and disseminated in an effective way – **budget master data, data concerning revenues and expenditures, public debt, state's assets, investments, treasury bills, (un)employment, price levels,**

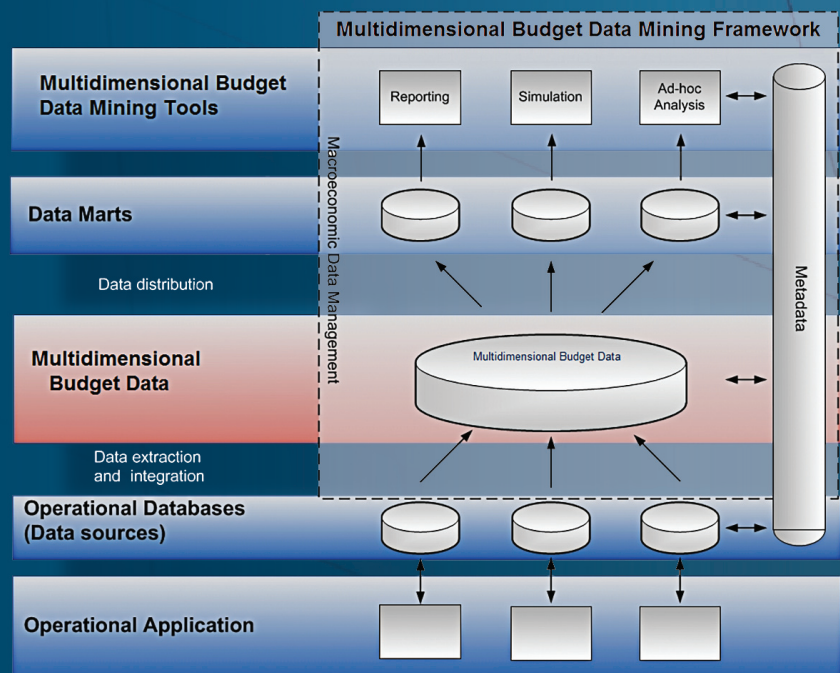


Figure 1. Macroeconomic Data Framework & Budget Analytics Model.

Macroeconomic Data Framework & Budget Analytics

etc. While all these data give insights about the actual state of the economy and support public sector agencies in making transparent and reliable projections of the future economy, they also form a basis for analysing strengths and weaknesses of policies in force, its character and extent of performance as well as revealing further policy options that can and must be taken into consideration by the government for **manoeuvring the overall economy to a more desirable state** – a state of economic growth and development.

In order to help the governments with this challenge, Teched Consulting Services designed and developed a **Macroeconomic Data Framework & Budget Analytics** for Croatian Ministry of Finance that facilitates and streamlines budgeting processes and result-

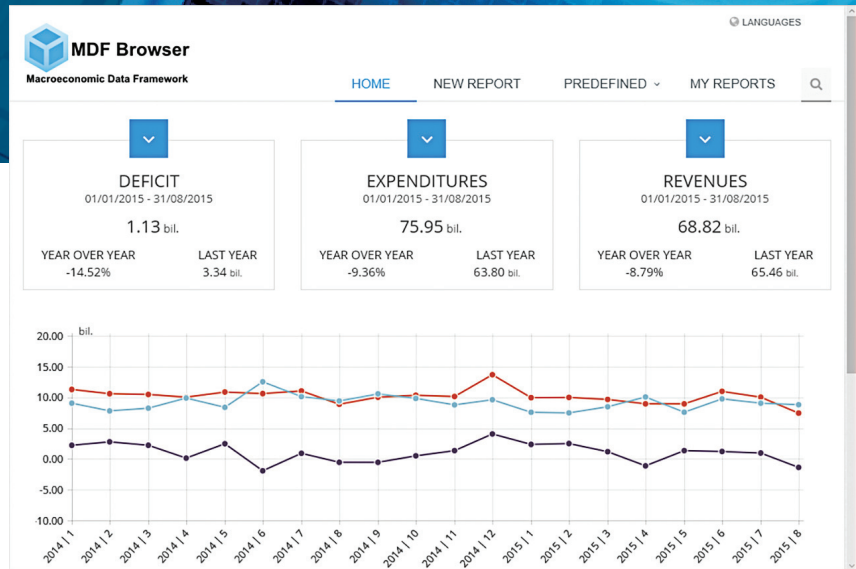


Figure 2. Web based data mining tool.

ing decision making procedures with special care taken for the **performance and program based budgeting** specificities.

How the Macroeconomic Data Framework & Budget Analytics can help

While agencies are beginning to recognize the crucial role that

data plays in their success, discovering the value hidden in data continues to be a struggle. Without a clear view of data and its significance, agencies are finding it difficult to boost organizational financial performance and comply with strict regulations. We approached this problem by delivering software and services to help:

- Create a **single point of access to consolidated data** from all relevant data sources, cleansing the data, transforming it and shaping in the form ready for analysis.
- Gain deeper **insight into the long-term economic impact of expenditures and make better, more reliable decisions** with advanced analytic capabilities, including large-scale forecasting and optimization.
- Clearly communicate the **value and results of programs** by developing a performance management system that has meaningful and targeted outcome measures.

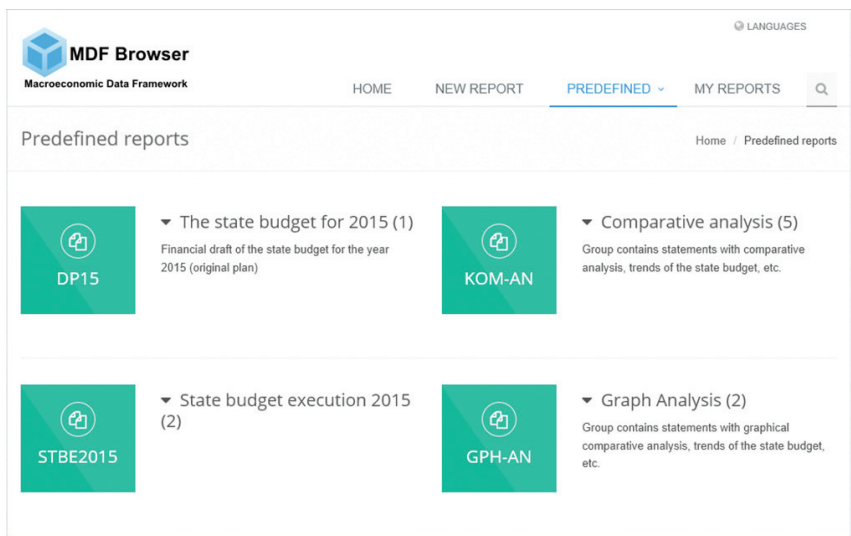


Figure 3. Web based data mining tool - predefined reports.

Macroeconomic Data Framework & Budget Analytics

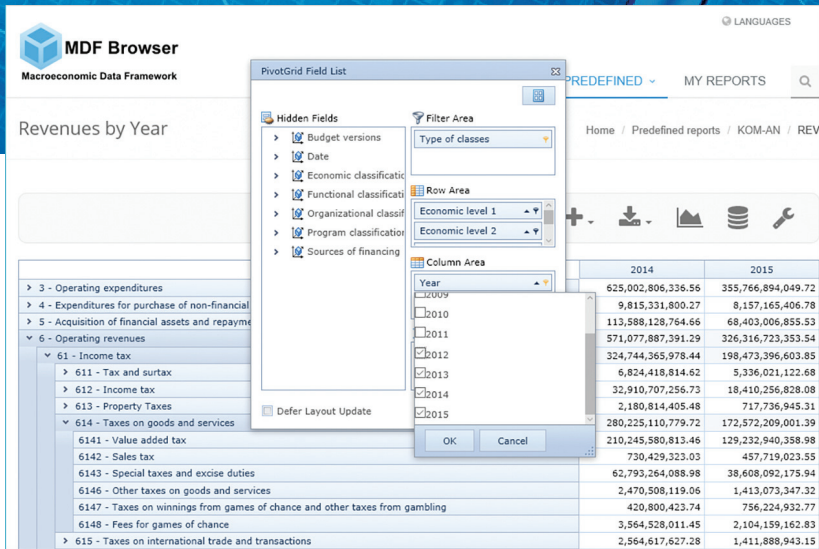


Figure 4. Web based data mining tool - report customisation.

ics and ad hoc reporting, our Budget Data Mining Framework & Tools deliver predictive budget modeling capabilities in form of budget simulations and forecasts.

- **An integrated framework** - our platform is engineered to seamlessly deliver data management, reporting and analytics through a single framework that can flexibly grow within and across government organizations.

Case Study

We successfully implemented Macroeconomic Data Framework & Budget Analytics in the Croatian Ministry of Finance and the State Treasury and they found specific use of it in the Budget

- Provide valuable **insights and essential decision-support information to stakeholders and policy makers** by delivering accurate and timely reports on spending and program effectiveness.

- **Standard Analytics** – our framework and tools provide an accurate, unified view of program performance and budget execution status at all levels of government, giving users the ability to draw conclusions, format presentation-quality results and easily share findings via a single, web-based reporting tool.

- **Advanced, predictive analytics** - in addition to standard analyt-

The Macroeconomic Data Framework & Budget Analytics is different

Our framework gives users access to the accurate data, our tools give users a way to analyze and transform data into meaningful information, and the ability to report on that information. The end result is greater transparency, better accountability and increased effectiveness. The Macroeconomic Data Framework & Budget Analytics offer:

- **Data management** – our framework and tools give access, integrates and cleans both structured and unstructured data from disparate systems, regardless of format or location.



Figure 5. Web based data mining tool - chart support.

Macroeconomic Data Framework & Budget Analytics

preparation and execution department of the Bureau of Macroeconomic Analysis and Planning.

The budget preparation and planning process by its structure consists of several interrelated sub-processes of various public sector agencies where data produced at one place is need as input by other departments. Often when there was a need for accessing data from many different sources, the departments were dealing with drawbacks reflected in data redundancy, dispersions on different locations, quality losses, long waiting times for deliveries and constraints in establishing data relations for advanced business analytics. This can be accredited to separate data stores and databases in form of spread sheets, documents and other formats containing similar data and updated in various points of time. This situation heavily influenced work efficiency and data accuracy leading to

	2013	2014
6 - Operating revenues Total	108.585.049.413,97	113.567.779.305,33
61 - Income tax Total	62.713.258.493,54	63.074.040.447,92
611 - Tax and surtax	1.372.697.530,78	1.401.941.724,58
612 - Income tax	6.365.443.105,80	5.657.765.290,65
613 - Property Taxes	462.314.591,49	385.980.935,56
614 - Taxes on goods and services	53.349.543.537,09	55.191.815.509,32
615 - Taxes on international trade and transactions	1.159.371.094,86	424.500.885,24
616 - Other income tax	3.888.633,52	12.036.102,57
62 - Contributions Total	37.149.262.849,27	41.695.456.053,45
621 - Health insurance contributions	15.888.729.695,44	17.308.518.825,07
622 - Pension contributions	19.407.865.060,80	22.454.056.819,09
623 - Contributions for employment	1.852.668.093,03	1.932.880.409,29
63 - Help from abroad (grants) and from subjects within the general budget Total	1.826.619.402,28	2.115.622.566,80
631 - Help from foreign governments	6.274.438,31	83.148.732,20
632 - Assistance from international organizations and EU institutions and bodies	1.730.232.941,34	1.063.213.432,13
633 - Assistance from the budget	88.794.584,17	51.589.016,33
634 - Assistance from other entities within the general budget	1.317.438,46	17.671.386,14
64 - Property income Total	1.906.626.190,02	2.763.490.158,49
641 - Income from financial assets	669.233.620,01	1.185.228.785,61
642 - Income from non-financial assets	1.202.120.026,58	1.502.371.345,71
643 - Interest income from loans	35.272.543,43	75.890.027,17
65 - Income from management and administrative fees, fees based on specific regulations and fees Total	4.302.364.690,64	3.157.471.803,68
651 - Administrative and administrative fees	577.249.421,86	487.451.074,73
66 - Sales of products and goods and services provided and revenues from donations Total	85.392.279,83	119.040.598,87
68 - Fines, administrative measures and other income Total	601.525.508,39	642.657.676,12
7 - Revenues from the sale of non-financial assets Total	259.493.687,89	689.719.775,10
71 - Revenues from sales of non-produced non-current assets Total	16.918.178,50	28.621.188,93
711 - Income from sale of tangible assets - natural resources	16.918.178,50	28.621.188,93
72 - Revenues from sales of fixed assets Total	242.040.052,44	316.850.144,06

Figure 6. Web based data mining tool - export to PDF.

waste of time, resources and insufficient data accuracy triggered by human mistakes.

Solution

The solution that we provided consists of:

- ETL functionality paired with a sophisticated warehousing strategy and leading-edge analytical and statistical tools for more advanced analysis;

- Analytical technology for forecasting and statistical analysis;
- Generic report and ad-hoc analytic templates created within MS Excel for power users;
- Web-based and easy to use tool for creating generic report and ad-hoc analytic within the web browser.

Contact us

If you would like to find out more about Macroeconomic Data Framework & Budget Analytics and Multidimensional Budget Data Mining Tools please contact us.

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Figure 7. Macroeconomic Data Framework & Budget Analytics integration with Excel.